Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A populated printed wiring board comprising:

a printed wiring board comprising:

a major surface;

a plurality of copper pads on the major surface;

a plurality of components including:

one or more components selected from the group consisting of microchips and discrete components; and

one or more components selected from the group consisting of electrical connectors and shields; and

a plurality of solder joints between said plurality of copper pads, and said plurality of components, said plurality of solder joints comprising a lead-free solder, wherein said plurality of solder joints are formed by coating said copper pads with an organic solderability preservative, depositing a solder paste that includes said lead-free solder over said organic solderability preservative placing contact areas of the plurality of components in contact with said solder paste and heating said printed wiring board in an air atmosphere;

wherein:

said solder paste has a thickness T when applied to said copper pads;

a minimum inter-pad spacing of said pads is S; and

a ratio of the solder [[past]] paste thickness to the minimum inter-pad spacing T/S is at least 0.5[[.]];

wherein said plurality of components are all surface mounted onto said printed wiring board.

2. (Original) The populated printed wiring board according to claim 1 wherein

at least a subset of said plurality of copper pads are spaced by an inter-pad spacing of less than 0.25 millimeters.

3. (previously presented) The populated printed wiring board according to claim 1 wherein:

said solder consists essentially of one or more materials selected from the group including silver, tin, and copper.

4. (previously presented) The populated printed wiring board according to claim 1 wherein:

said solder paste comprises rosin mildly activated flux.

5. (Original) The populated printed wiring board according to claim 1 wherein:

said solder paste has a thickness of at least 0.127 millimeters when applied to said coated copper pads coated with said organic solderability preservative.

6. (previously presented) The populated printed wiring board according to claim 1 wherein:

said solder comprises:

95.1 to 95.9 percent tin;

3.6 to 4.0 percent silver;

said solder paste comprises rosin mildly activated flux; and

said solder paste has a thickness of at least 0.127 millimeters when applied to said copper pads coated with said organic solderability preservative.

7. (Cancelled)

8. (Original) The populated printed wiring board according to claim 1 wherein:

said plurality of components include one or more shields.

9. (Original) The populated wiring board according to claim 1 wherein:
said plurality of components include one or more electrical connectors.

10. (Original) The populated wiring board according to claim 1 comprising:
said organic solderability preservative on said copper pads.

11. (currently amended) The populated printed wiring board according to claim 1 wherein[[:]] said solder comprises:
95.1 to 95.9 percent tin; and
3.6 to 4.0 percent silver.

12. (currently amended) The populated printed wiring board according to claim 11 wherein[[:]] said solder comprises copper and the copper is present in an amount up to[[:]] 0.9 percent.

13. (Currently amended) A method of manufacturing a populated printed wiring board comprising;

manufacturing a printed wiring board that comprises a plurality of copper pads including exposed copper surfaces, said plurality of copper pads for surface mounting circuit components thereon;

coating the said copper pads with an organic solderability preservative;

depositing a solder paste that includes a lead-free solder on the organic solderability preservative coated copper pads, wherein:

said solder paste has a thickness T when applied to said copper pads;

a minimum inter-pad spacing of said pads is S; and

a ratio of the solder [[past]] paste thickness to the minimum inter-pad spacing T/S is at least 0.5;

positioning a plurality of circuit components on said printed wiring board, such that contact areas of the plurality of components are in contact with the solder paste; and

heating the printed wiring board to a temperature above a liquidous temperature of said lead-free solder in an air atmosphere[[.]];

wherein said plurality of components are all surface mounted onto said printed wiring board.

14. (Original) The method of manufacturing a populated printed wiring board according to claim 13 wherein

manufacturing the printed wiring board that comprises the plurality of copper pads comprises manufacturing a printed wiring board in which one or more of the pads have inter-pad spacing of less than 0.25 millimeters.

15. (Original) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

coating said copper pads with an organic solderability preservative comprises coating said copper pads with an organic solderability preservative selected from the group consisting of substituted benzimidazole, benzotriazoles, and imidazole.

16. (Original) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

coating said copper pads with an organic solderability preservative comprises coating said copper pads with substituted benzimidazole.

17. (previously presented) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

heating the printed wiring board to a temperature above a liquidous temperature, comprises heating the printed wiring board to a temperature above the liquidous temperature of said lead-free solder for at least 40 seconds.

18. (Original) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

depositing the solder paste comprises depositing the solder paste by stenciling using a non step down stencil.

19. (Original) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

positioning a plurality of circuit components on said printed wiring board comprises positioning one or more components selected from a first group consisting of electrical connectors and shields on said printed wiring board, and one or more components selected from a second group consisting of microchips and discrete components.

20. (Original) The method of manufacturing a populated printed wiring board according to claim 14 wherein:

depositing the solder paste that includes the lead-free solder on the organic solderability preservative coated copper pads comprises depositing a solder past that includes a solder that consists essentially of one or more materials selected from the group consisting of tin, silver and copper.

21. (Original) The method of manufacturing a populated printed wiring board according to claim 20 wherein:

depositing the solder paste that includes the solder that consists essentially of one or more materials selected from the group consisting of tin, silver and copper comprises depositing a solder paste that comprises a rosin mildly active solder flux.

22. (Original) The method of manufacturing a populated printed wiring board according to claim 20 wherein:

depositing a solder paste that includes a lead-free solder on the organic solderability preservative coated copper pads comprises depositing a solder that comprises tin and silver.

23. (Cancelled)

24. (Currently amended) A method of manufacturing a populated printed wiring board comprising:

fabricating a printed wiring board that includes a plurality of copper pads;

coating the copper pads with an organic solderability preservative;

depositing one or more oversized patches of a solder paste that includes a lead-free solder over the organic solderability preservative coated copper pads, wherein:

said solder paste has a thickness T when applied to said copper pads;

a minimum inter-pad spacing of said pads is S; and

a ratio of the solder [[past]] paste thickness to the minimum inter-pad spacing T/S is at least 0.5;

placing ~~one or more~~ a plurality of electrical components on the printed wiring board such that contact areas of the ~~one or more~~ plurality of electrical components are in contact with the solder paste overlying the copper pads; and

heating the printed wiring board in an air atmosphere to a temperature above the liquidous temperature of the solder included in the solder paste.

25. (Original) The method of manufacturing a populated printed wiring board according to claim 24:

wherein two or more patches of solder paste that are deposited are spaced by less than 0.25 millimeters.

26. (previously presented) The populated printed wiring board according to claim 24 wherein:

said solder consists essentially of one or more materials selected from the group including silver, tin, and copper.

27. (previously presented) The populated printed wiring board according to claim 24 wherein:

said solder paste comprises rosin mildly activated flux.

28. (Original) The populated printed wiring board according to claim 24 wherein:

said plurality of components include one or more shields.

29. (Original) The populated wiring board according to claim [[22]] 24 wherein:

said one or more electrical components include one or more electrical connectors.

30. (previously presented) The populated printed wiring board according to claim 24 wherein:

said solder comprises:

95.1 to 95.9 percent tin; and

3.6 to 4.0 percent silver.

31. (Original) The populated printed wiring board according to claim 30 wherein:

said solder comprises copper and the copper is present in an amount up to 0.9 percent.